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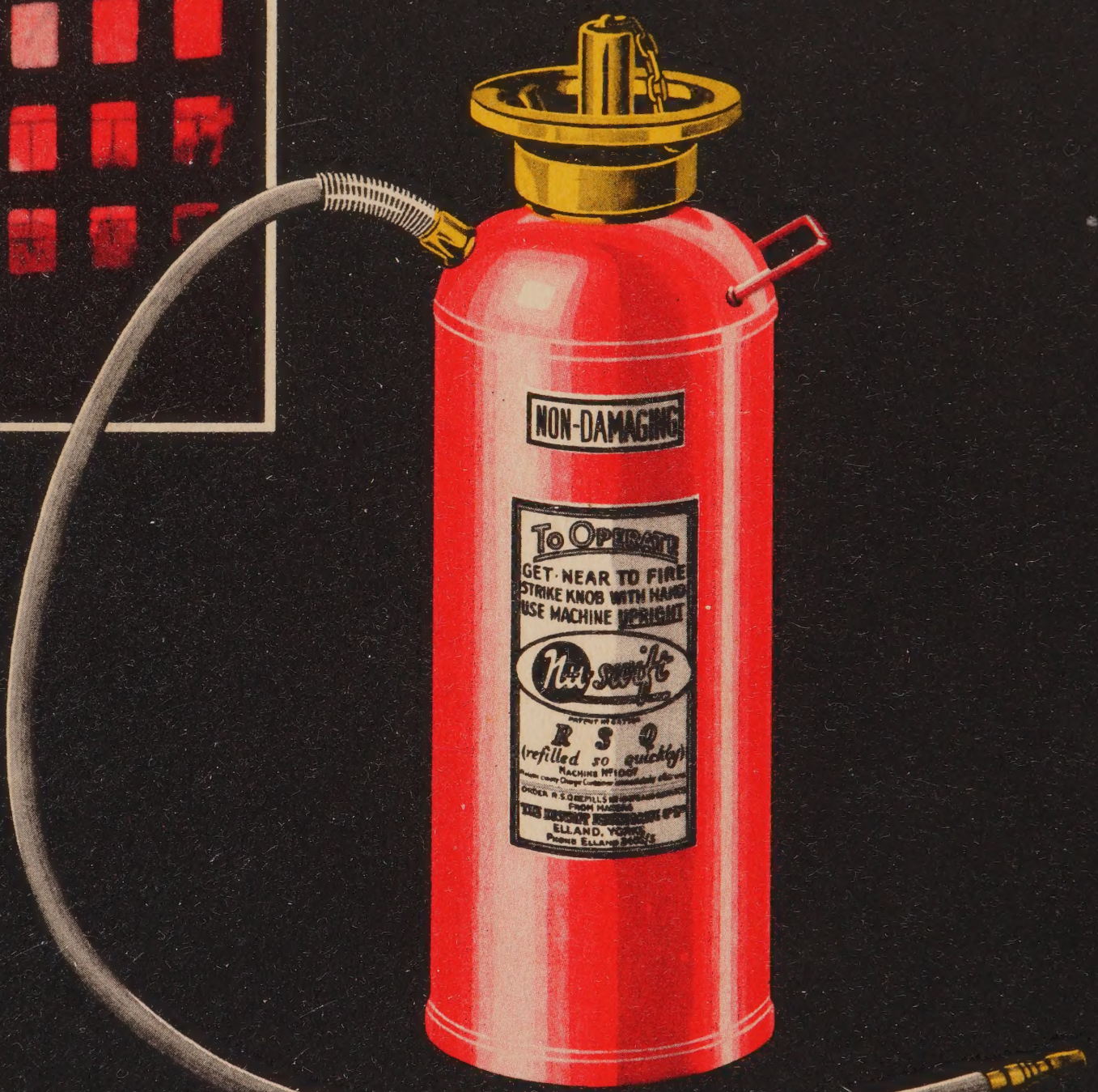
PROTECTION



by

NEW swift

TRADE MARK

FIRE

" How great a matter
a little fire kindleth."
(*Shakespeare.*)

Wellcome Library
for the History
and Understanding
of Medicine

EVERY DAY, in this country alone, FIRE causes the loss of EIGHT LIVES. Every month, the cost of Fire Damage is more than TWO MILLION POUNDS. Moreover, fire puts workers out of employment !

THIS SHOULD NOT BE ALLOWED TO HAPPEN—

—and WOULD NOT—if effective means were available to subdue the fire AT THE OUTSET, during those first vital moments when it can be prevented from spreading.

The fire illustrated on the front cover broke out during business hours in a large store. A passer-by noticed a glow through a third storey window and immediately told an assistant. The alarm was sounded, but although the Fire Service was on the scene in a few moments the third and fourth floors were by that time blazing furiously, and despite the firemen's efforts, the entire building was burnt out. The firemen's task was rendered more difficult because of the need for isolating the outbreak to prevent its involving adjoining premises. The locality of the fire in a busy main street suspended all traffic just at the evening rush hour. No life was lost, but a fireman was badly injured, and there was serious financial loss, with grave dislocation of business.

The 2 gall. NUSWIFT R.S.Q. ([illegible]) WOULD HAVE PUT OUT that fire when the outbreak was first discovered— without any more damage to stock than would have been caused by two gallons of cold water.

NIP FIRE IN THE BUD

The **NEW NUSWIFT** *Way*

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A.R.P. Handbook No. 9 (INCENDIARY BOMBS AND FIRE PRECAUTIONS) and A.R.P. Handbook No. 14 (THE FIRE GUARD'S HANDBOOK), both issued by the Ministry of Home Security, are publications that should be in the hands of everyone who is concerned with ★'First Aid' Fire Protection!

NEW Nuswift TRADE MARK SERVICE

Peacetime fire-fighting Equipment which can be converted in 30 seconds to extinguish incendiary bombs is a sound investment whatever happens, especially when it is realised that Nuswift R.S.Q. Machines are guaranteed for 10 years (See Leaflets T.4, T.5 and T.6).

'THE UNTRAINED ARE A LIABILITY THE TRAINED ARE AN ASSET!'

HERE IS AN EXTRACT FROM HANDBOOK No. 14

Fire bomb raids are a threat to the very life of the nation. As is well known a very small number of bomber aeroplanes can shower many thousands of small incendiary bombs over a town in the space of a few minutes; and these, if left alone, will start more fires than could possibly be put out either by the National Fire Service or by the efforts of unorganized and untrained individuals, however well-meaning they may be. This is why it becomes the duty of all able-bodied men and women to give whatever service they can in the part-time army of millions of citizens trained to deal with fire bombs promptly, whenever and wherever they fall.

The fine response of both the Police and the Professional Fire Services to the heavy additional duties allocated to them by Home Office Regulations and the Civil Defence Act is deserving the highest commendation.

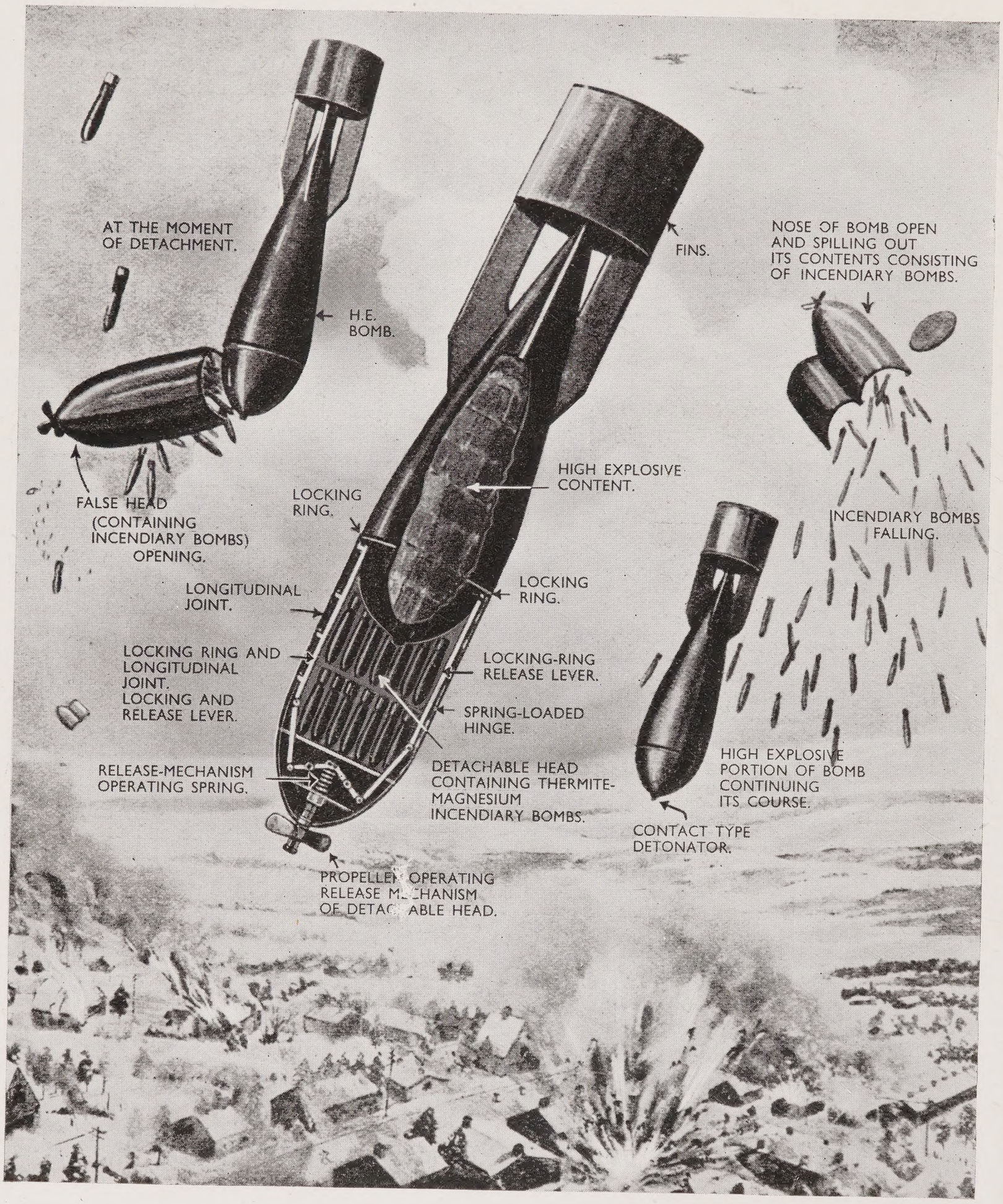
But the sheer magnitude of their task makes them assent to, and indeed welcome, expert assistance in the form of practical educational lectures and test demonstrations of methods dealing with incendiary bombs. And not only with the bombs themselves but with the fires caused by them.

'NUSWIFT' SERVICE has been extensively used by, and is available to, Police, Fire Brigades, Corporations, Councils, Education Authorities, Business Houses, and every section of Commerce and Industry. We also have a 'block' system for property owners, under which tenants share the responsibility for protection.

THE NUSWIFT ENGINEERING CO., Ltd., ELLAND, Yorks.

(Pronounced NEWswift)
Telephone: Elland 2452/3

24 hours service
Telegrams: Protector, Elland


AT THE MOMENT OF DETACHMENT.
H.E. BOMB.
FINS.
NOSE OF BOMB OPEN AND SPILLING OUT ITS CONTENTS CONSISTING OF INCENDIARY BOMBS.
HIGH EXPLOSIVE CONTENT.
LOCKING RING.
FALSE HEAD (CONTAINING INCENDIARY BOMBS) OPENING.
INCENDIARY BOMBS FALLING.
LONGITUDINAL JOINT.
LOCKING RING.
LOCKING RING AND LONGITUDINAL JOINT. LOCKING AND RELEASE LEVER.
LOCKING-RING RELEASE LEVER.
SPRING-LOADED HINGE.
RELEASE-MECHANISM OPERATING SPRING.
DETACHABLE HEAD CONTAINING THERMITE-MAGNESIUM INCENDIARY BOMBS.
HIGH EXPLOSIVE PORTION OF BOMB CONTINUING ITS COURSE.
CONTACT TYPE DETONATOR.
PROPELLER OPERATING RELEASE MECHANISM OF DETACHABLE HEAD.

BREAD BASKET

7′ 6″ LONG, 3′ DIA. SCATTERS APPROX. 100 INCENDIARIES

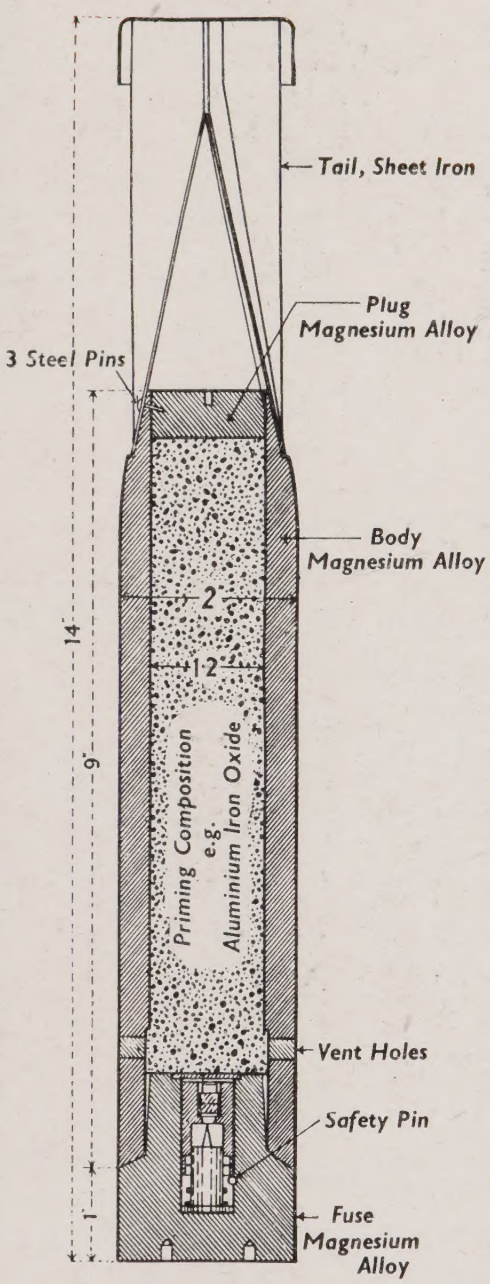
INCENDIARY BOMBS

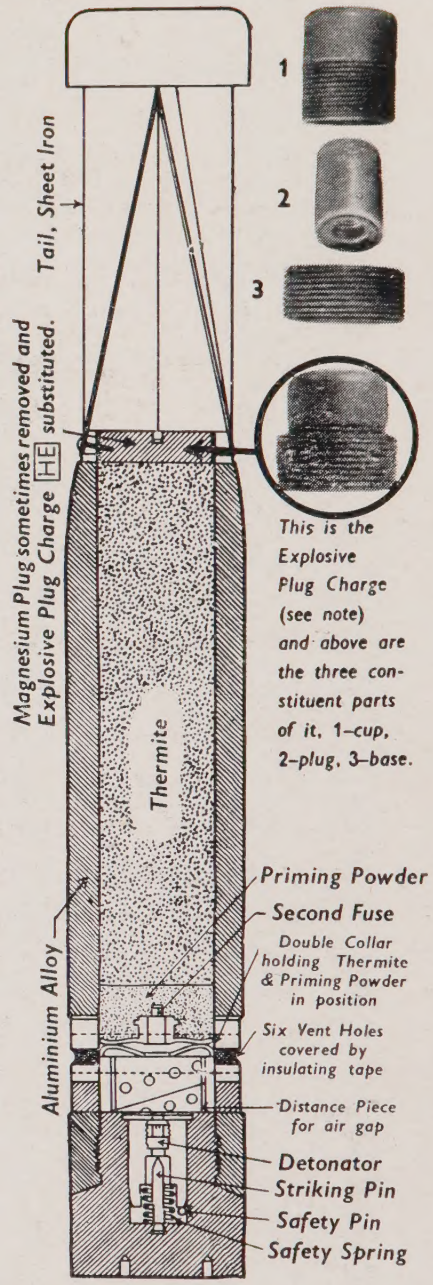
BRITISH — & — GERMAN TYPES

PHOTOGRAPHED & SECTIONALISED

COMPARISONS BY

NEW Nuswift TRADE MARK




Tail, Sheet Iron
1
2
3
Magnesium Plug sometimes removed and Explosive Plug Charge HE substituted.
This is the Explosive Plug Charge (see note) and above are the three constituent parts of it, 1–cup, 2–plug, 3–base.
Thermite
Priming Powder
Second Fuse
Double Collar holding Thermite & Priming Powder in position
Six Vent Holes covered by insulating tape
Distance Piece for air gap
Aluminium Alloy
Detonator
Striking Pin
Safety Pin
Safety Spring

BRITISH *1 KILO INCENDIARY BOMB.*

MAGNESIUM ELECTRON
Photo shows the Cast Case.

NAZI DELAYED ACTION SLEEVE CONTAINING THERMITE FILLING

GERMAN *INCENDIARY BOMB, COMPARABLE IN SIZE. MAY CONTAIN DELAYED ACTION CHARGE.*

THE FILLING IS THERMITE IN POWDER FORM, DEVELOPING AN INTERNAL TEMPERATURE OF 4/5000° FAH. THIS INTERNAL HEAT IGNITES THE CASING OF MAGNESIUM ELECTRON WHICH BURNS AT A TEMPERATURE OF 2/3000° FAH. IN APPROXIMATELY 60/90 SECONDS THE ENTIRE BOMB IS A MOLTEN MASS.

THE NAZI BOMBS DATED 1936/1941 ALREADY DROPPED HAVE A HARDER CASING WHICH IS NOT AS GOOD AN INCENDIARY AS THE BRITISH – *BUT THEY DO START FIRES.*

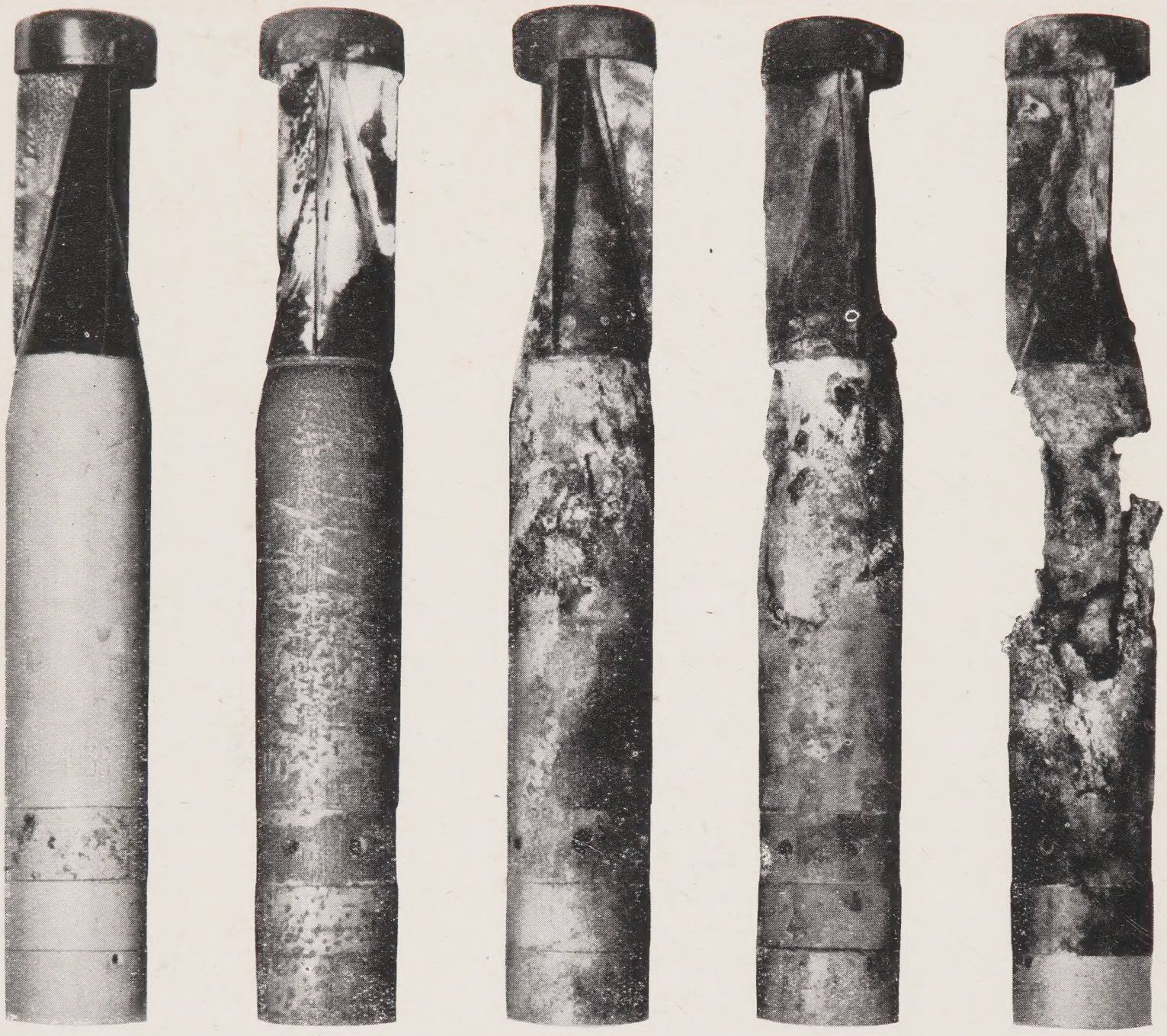
IN 60/90 SECONDS THE NAZI INCENDIARY BOMB CAN DO A LOT. *SO CAN YOU.*

IF THE BOMB IS IN THE OPEN, COVER IT WITH EARTH, SAND OR POWDER, THUS BLACK OUT WILL BE RESUMED QUICKER THAN BY USING A STIRRUP PUMP, SPRAY OR ANYTHING WET UNLESS IT BE A VERY POWERFUL JET, WHICH CAN ONLY BE USED UNDER CERTAIN CIRCUMSTANCES.

THE NUSWIFT ENGINEERING CO., Ltd., ELLAND, Yorks.
(Pronounced NEWswift)
Telephone: 2452 Elland
24 hours service
Telegrams: Protector, Elland

HUNDREDS extinguished by Average time — 22 seconds!

NU-SWIFT TRADE MARK



Actual Photographs of Genuine Nazi Incendiary Bombs, extinguished in varicus stages of burning by the NUSWIFT R.S.Q. Machine, which propels under pressure a finely atomized spray of water on to the bomb. The NUSWIFT spray extinguishes a bomb in the average time of 22 seconds. A Stirrup Pump (with 3 operators) takes 3 minutes. Therefore, the same 3 operators, with R.S.Q. Machines, could "kill" 15 incendiary bombs in the same time.

Two gallons of water, propelled by CO_2 gas through an R.S.Q., will extinguish 5 bombs in 2 mins. 5 secs.

Through a Stirrup Pump (with 3 operators) 6 gallons must be used to extinguish one bomb . . . . in 3 minutes.

A.R.P. Handbook No. 9 says: "The priming composition burns at 4,000° to 5,000° F. and the molten magnesium burns for 10 to 15 mins. and may remain active for as long as 20 mins."

These photographs prove conclusively that whether a bomb has been burning for seconds or minutes, NUSWIFT PUTS IT OUT!

THE NU-SWIFT RSQ 10 YEARS GUARANTEE

Nuswift

RSQ

10 YEARS GUARANTEE

Refilled So Quickly

REFILLED IN 30 SECONDS

The R.S.Q. takes only HALF A MINUTE to refill, instead of upwards of half-an-hour (necessary for soda-acid extinguishers). The actual refilling is perfectly simple—no messy recharging and no handling of fragile bottles of acid. All you need is a refill, and access to a convenient water supply.

NO
ACID
CORROSIVE
DAMAGE
DANGER TO OPERATOR

POWERFUL JET— ELECTRICALLY SAFE

The R.S.Q. gives a more powerful jet than any soda-acid machine, yet the liquid expelled does no more damage to the materials it touches than would be done by an equivalent stream of cold water.

The R.S.Q. can be used freely on a fire, the cause of which may prove to be electrical or in which there is live current up to 25,000 volts, with perfect safety. (See Leaflet No. T.7.)

DESCRIPTION	PRICE		
1 **Universal** (R.S.Q.) Nuswift **Extinguisher** 6 **Universal Charges** 1 **Carrier** All Complete	11	11	0

No charge for refilling after use on a fire if reported to us within 7 days.

Officially Approved by the Board of Admiralty.

THE NUSWIFT ENGINEERING CO., Ltd., ELLAND, Yorks.
(Pronounced NEWswift)
Telephone: 2452/3 Elland
24 hours service
Telegrams: Protector, Elland

RSQ

10 YEARS GUARANTEE

THE CO_2/WATER EXTINGUISHER WHICH IS REFILLED & RECHARGED IN 30 SECONDS.

FOR USE IN MINES, ON SHIPS, AND ON ALL FREELY BURNING FIRES

NO DANGER OF ACCIDENTAL DISCHARGE

The R.S.Q. is carried by the wheel-head and is operated by striking the knob. No sudden shock, fall or jar can set the machine in operation. The quick-release cap cannot stick (there is nothing to corrode), and cannot be lost because it is anchored by means of a chain.

The Hose fitment gives the operator greater freedom of movement and easier and more effective control of the fire. ALSO with the hose, the operator can start or stop the machine or vary the stream from jet to spray.

BODY: 16 Gauge Lead-coated Steel, Welded to specification of Board of Trade and Fire Offices' Committees. Construction finally lead-coated inside and out. Finished in special hard enamel.

FITTINGS: Best Bronze, accurately machined, polished and lacquered. Striker protected by rigid quick-release cap anchored by chain. Charge is of specially treated dry gas expellent in a container of solid drawn copper and welded construction.

GUARANTEED FOR TEN YEARS

Even a schoolboy can tackle a blaze like this confidently with the R.S.Q.

Ten seconds later! The fire under control! and (*below*) Twenty seconds later . . Fire OUT

E.W. Swift TRADE MARK

THE

Nuswift

TRADE MARK

R.S.Q. EXTINGUISHER

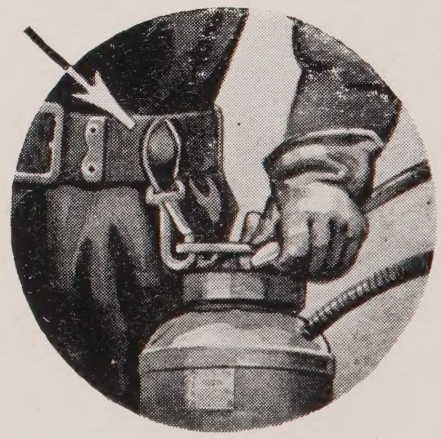
DOUBLE the power of individual Fire Guards to extinguish incendiary bombs and fires so caused . . . . let them go into action with TWO R.S.Q.'s at the same time

A team of three is needed to work a hand pump, but ONE OPERATOR CAN BRING THE ENORMOUS PRESSURE OF TWO R.S.Q. EXTINGUISHERS TO BEAR on the bomb and the fire, not merely controlling, but EXTINGUISHING both . . . . IN SECONDS! ***In fire-fighting efficiency, this equals the effort of four approved pattern hand pumps employing 12 people.***

1

Notice particularly in Fig. 1 (and Figs. 2 and 3 overleaf) how the operator's hands are left free to control the nozzle (either ordinary or dual nozzle fitted to the 42-inch hose which is standard with the R.S.Q.), or in case of need, to pull aside debris before going into action.

THE best way to attack an incendiary bomb or a fire is to get the maximum striking force of water on to the target in the quickest possible time. Two R.S.Q.'s can be carried by a single fire guard (see Fig. 1) by means of a special belt that takes the weight. Hooks from the belt are secured under the rim of the operating head of the extinguisher (see detail in inset).



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2 The operator in Fig. 2 is **asking unnecessarily for trouble.** By adopting such an upright position, she is exposing her body far too much to heat from the fire, and she is far too vulnerable to blazing particles of metal from the bomb (particularly if it is of the "explosive" type). The cardinal rule in first-aid fire-fighting is: "Keep Low!" Let the helmet protect the face.

When incendiary bombs are falling, **the initial responsibility rests with the fireguard.** If the NUSWIFT R.S.Q. goes into action on an incendiary bomb within a few seconds of its falling, the bomb can be killed before the casing has fully ignited, i.e., before the whole is molten metal.

3 Fig. 3 shows the operator **"getting down to it" correctly,** using her steel helmet more effectively, and presenting less human surface to the fire. The extinguishers can be put into action and operated simultaneously in this position or with the operator prone if heavy smoke demands it.

THE Nuswift R.S.Q. 10 YEARS GUARANTEE

IS PERFECTLY **SAFE**

For use on Incendiary Bombs. IS GUARANTEED NOT TO GIVE OFF POISON GASES.

● *Write for Leaflets No. T.4 (R.S.Q. constructional details), No. T.3 (British and German incendiary bombs), and No. T.6, to THE NUSWIFT ENGINEERING CO., LTD., PROTECTOR WORKS, ELLAND, YORKS. Tel. Elland 2452/3*

EIGHT INCENDIARY BOMBS extinguished with ONE CHARGE by ONE OPERATOR . . . but the Operator used the NUSWIFT R.S.Q. EXTINGUISHER . . . AT THE RIGHT TIME . . . IN THE RIGHT WAY.

(1) Do not try to use the R.S.Q. as in Fig. 1. Smoke would choke and blind you. Get down to it ! If you are working close up to the bomb, you must be protected against the intense heat and the fragments of flying, molten metal.

(2) Notice here how the operator has protected herself, even though she has no steel helmet, by using the R.S.Q. extinguisher as cover. See what good protection the stout cylinder gives. The operator pushes the extinguisher forward whilst her right hand holds and aims the nozzle.

The right time to attack incendiary bombs is within the first few seconds of their falling, before the casing has fully ignited and melted, and before molten metal has had time to ignite everything in the vicinity. Experience proves that the delayed action high explosive charge in these bombs is unlikely to explode if they are tackled within the first 60 to 90 seconds.

(3) Here again, lying in the prone position, the operator is making good tactical use of the R.S.Q. extinguisher as cover.

The inclusion of a high explosive charge in the head of a proportion of Nazi incendiary bombs—(See Leaflet No. T.3)—makes caution—and cover—absolutely essential.

THE NUSWIFT ENGINEERING CO., Ltd., ELLAND, Yorks.
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4

4 Excellent cover is afforded by a simple shield used in conjunction with the R.S.Q. Visor slit (wire gauze protection) for eyes and the wider slit to give play to the nozzle held in the operator's right hand.

CONFIDENCE AND COVER

The first was always essential to efficient fire-fighting. The second has become necessary not only because of the molten metal and very fierce heat thrown out by incendiaries and fires so caused, but by the inclusion of explosive charges in many German fire bombs.

5 When the operator has a steel helmet, this protection plus the correct placing of the NUSWIFT R.S.Q. extinguisher provides good body cover (see also Fig. 2). Refusal to take advantage of available cover is not bravery—it's foolhardiness!

6 This operator **is** foolhardy ; she has neglected the cover the R.S.Q. would provide. The prone position is often essential because of smoke conditions (the air is clearer near the floor), but she has far less chance of being hit by blazing metal if lying flat **behind** the R.S.Q.

THE ENGLISH ELECTRIC COMPANY LTD., STAFFORD

RESEARCH DEPARTMENT REPORT

THE NEW Nuswift TRADE MARK ENGINEERING COMPANY LTD

TESTS (TO DETERMINE ELECTRICAL SAFETY) CARRIED OUT ON NUSWIFT FIRE EXTINGUISHERS.

Fig. 1

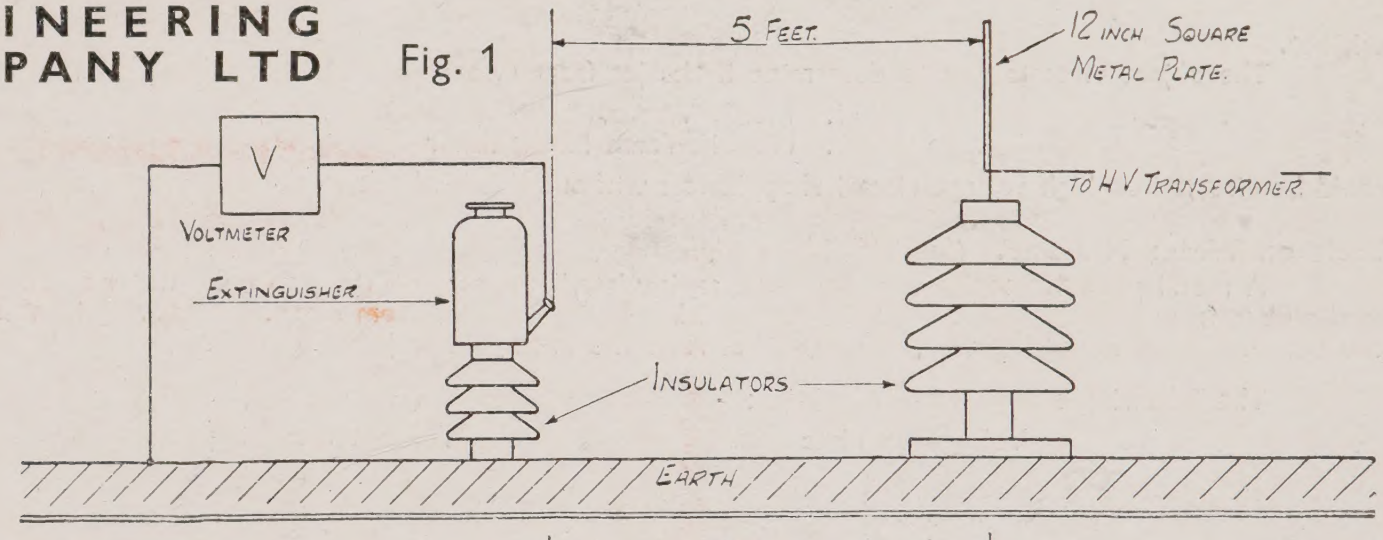
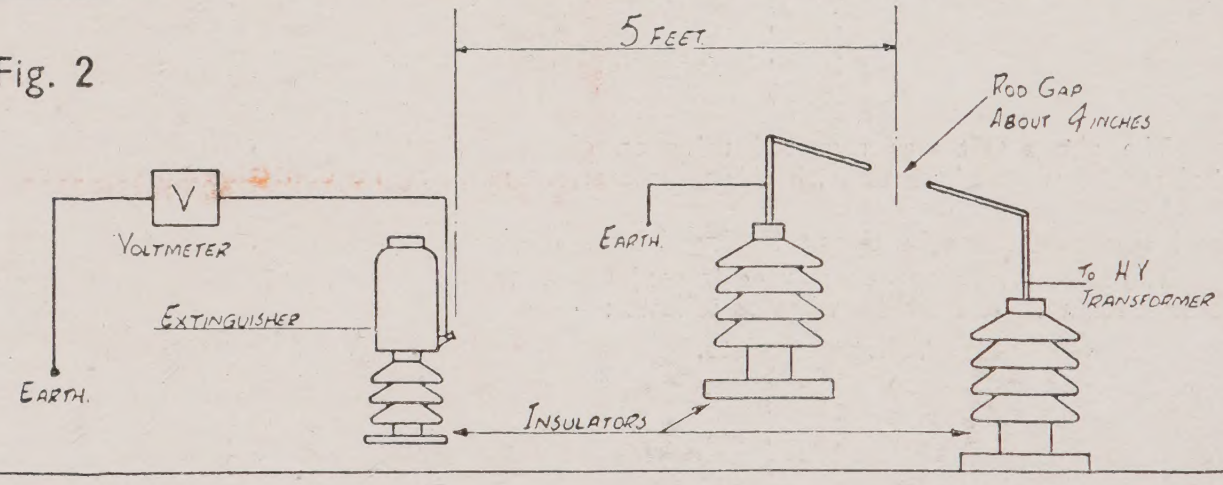


Fig. 2



SEE OTHER SIDE OF THIS LEAFLET for details of **TESTS,** with references to these diagrammatic illustrations.

ENGLISH ELECTRIC CO.
STAFFORD.

RESEARCH DEPT REPORT N° 1051.

These tests have been carried out for The Nuswift Engineering Co. Ltd., and enquiries should therefore be addressed to The Nuswift Engineering Co. Ltd., Protector Works, Elland, Yorks., and NOT to the English Electric Co. Ltd.

Chief Insulation and Research Engineer

P.T.O.

THE NUSWIFT ENGINEERING CO., Ltd., ELLAND, Yorks
(Pronounced NEWswift)
Telephone: Elland 2452/3
24 hours service
Telegrams : Protector, Elland

TESTS carried out on FIRE EXTINGUISHERS

SUPPLIED BY THE NEW Nuswift TRADE MARK ENGINEERING CO. LTD.

Object.

The object of tests was to determine if the jet from two classes of Extinguisher, i.e.,

1. R.S.Q. Water Machine
2. Nuswift Foam Extinguisher

could be directed on high voltage electrical appliances without risk of shock to the operator of the Extinguisher.

Tests on Water Machine. (See Fig. 1.)

A metal plate 12″ × 12″ was placed on an insulated support and the jet of the water machine directed at the plate from a distance of 5 feet, the Extinguisher being insulated from earth. A moving iron voltmeter—100 volts full-scale deflection was connected between the Extinguisher jet and earth.

The following results were obtained :—

Voltage on plate	Voltmeter reading
2500	0
5000	0
10000	0
15000	0
20000	0
25000	0

The above test was repeated using an electrostatic voltmeter with 200 volts full-scale deflection. Identical results were obtained with this voltmeter, there being no deflection up to 25000 volts.

Group 1 tests on Nuswift Foam Extinguisher. (See Fig. 1.)

The same arrangement was used in conjunction with the electrostatic voltmeter as for the previous test on water machine. The results were as follows :—

Voltage on plate.	Voltmeter reading.
10000	0
20000	0
30000	0
40000	0
50000	0
55000	0

Group 2 tests on Nuswift Foam Extinguisher. (See Fig. 2.)

A rod gap composed of ½″ diameter copper rods with flat ends and spaced approximately 4″ apart, was mounted on insulated supports, and voltage applied to give flashover. The Extinguisher jet was directed from a distance of 5 feet directly at the gap. The electrostatic voltmeter was connected to the nozzle with the Extinguisher insulated from earth. The following results were obtained :—

Voltage on gap.	Voltmeter reading.
60000	0

Tests with un-insulated Extinguishers.

As the tests on the R.S.Q. water machine and foam machine all indicated that there was no conduction of electricity through the jet of extinguishing material at the voltage stated, the whole series of tests was repeated with the Extinguishers un-insulated and held in the bare hands by the Nuswift representative, who was standing on wet earth, and no ill effects were felt.

W. Nelson

Research Department.

NON-DAMAGING
R·S·Q
REFILLED SO QUICKLY
TO OPERATE
GET NEAR TO FIRE
STRIKE KNOB WITH HAND
USE MACHINE UPRIGHT
THE NUSWIFT ENGINEERING
COMPANY LIMITED
ELLAND YORKS.

SOLUTION LEVEL
CAPACITY 2 GALLONS
MANUFACTURED IN 1943
NON-DAMAGING
O OPERATE

THESE SHREWD BUSINESS MEN—

HOVIS, LIMITED.
UNION CARTAGE CO. LTD.
LONDON & NORTH EASTERN RAILWAY.
THE BRITISH OXYGEN CO. LTD.
EASTERN COUNTIES OMNIBUS CO.
TRINIDAD LEASEHOLDS, LTD.
NORTH EAST ELECTRIC SUPPLY CO.
DORMAN LONG & CO. LIMITED.

THE LANCASHIRE STEEL COR. LTD.
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B.I. TRANSPORT CO. LIMITED.
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CALLENDARS CABLE CONSTRUCTION COMPANY, LIMITED.
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MIDDLESEX COUNTY COUNCIL.
KARDEX LIBRARY BUREAU.

COLNE VALLEY WATER COMPANY.
THE M.G. CAR COMPANY, LTD.
THE CAMBRIDGE UNIVERSITY LIBRARY.
THE FORD MOTOR COMPANY, LTD.
UNION CABLE CO. LTD.

HAVE CHOSEN NUSWIFT PROTECTION

NIP FIRE
IN THE BUD
The NEW NUSWIFT *Way*

NUSWIFT
EXTINGUISHERS

and full details of all NUSWIFT models can be secured at our Branches in all principal cities and towns.

Head Office and Works

THE NUSWIFT ENGINEERING CO. LTD.

Protector Works

ELLAND - - YORKS.

Telephone - - ELLAND 2452/3
Telegrams - PROTECTOR, ELLAND